



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,519	08/01/2003	Youssri Helmy	08204/0203518-USO	4346
38878	7590	12/27/2006		
DARBY & DARBY P.C. P.O. BOX 5257 NEW YORK, NY 10150-5257			EXAMINER ELALLAM, AHMED	
			ART UNIT	PAPER NUMBER
			2616	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/632,519

Applicant(s)

HELMY ET AL.

Examiner

AHMED ELALLAM

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is responsive to RCE filed on 12/01/2006.

Claims 1-11, and 13-29 are pending.

Drawings

1. The changes to figure 2 are not approved by the Examiner, since they introduced new matter, i.e. a memory and processor. Applicant is required to cancel the amended drawing of figure 2.

Claim Rejections - 35 USC § 112

2. Claims 25-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant is required to cancel the new matter in the reply to this Office Action. The specification as originally filed doesn't disclose implicitly or explicitly the memory and the processor within the network device.

Specification

3. The amendment filed on 06/07/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

"A processor 202 and memory 204 are associated with each network accelerator 14 shown in Fig. 2. Further, each processor 202 executes data stored in a memory 204 to enable operation of each proxy application 200. "

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6-11, 13-17, 19-22, 24-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett et al, US 2003/0177396 A1 in view of Hypertext Transfer Protocol HTTP/1.1 Standard, paragraphs 8.1, page 38. Hereinafter, referred to as Bartlett and HTTP/1.1 standard.

Regarding claim 1, with reference to figures 1, 5, 6 and 7, Bartlett discloses a method for handling packet traffic in a data network comprising:

routing outgoing network layer packet traffic to a local network Performance Enhancing Proxying (PEP) peer (101 as in figure 1, and 701 as in figure 7) associated

Art Unit: 2616

with a host 719 (the host is the claimed selected source node) see figure 7, (claimed routing outgoing network layer packet traffic associated with a network layer connection from a selected source node to a local network accelerator associated with a node which is a source of the packet traffic network, the local accelerator running a proxy application); Bartlett also discloses intercepting the packet traffic, see [0066], and multiple TCP connections are multiplexed onto and carried by a single backbone connection (claimed physical layer connection) to a remote PEP peer (107 as in figure 1, and 705 as in figure 7) for providing an end-to-end connections between IP host 301 and its other IP host on the other side of the backbone link, see paragraphs [0065], [0068], [0098] , [0099], and [0111] (claimed opening two or more Transmission Control Protocol (TCP) transport layer end-to-end connections over at least one physical layer connection between the local network accelerator and at least one remote network accelerator); (Examiner, in accordance with the specification, the teaching of Bartlett of the multiple TCP connections that are multiplexed and carried by a single backbone connection to a remote PEP peer for carrying the packet traffic from a source host to a destination host, has as been interpreted as the claimed transmitting processed packet traffic to the at least one remote network accelerator associated with a destination node which is a destination of the packet traffic via at least one of the two or more transport layer connections). See paragraph [0129]. The remote PEP 107 reads on the claimed remote network accelerator runs another proxy application operating as a proxy for the destination node.

Regarding claim 6, with reference to figure 5, Bartlett discloses a PEP (Performance Enhancing Proxying) device (claimed data network routing device) comprising:

Router module 505 connected to receive incoming packet from a source node (example: host 301, fig. 3); Bartlett discloses that the packet are IP packet that are routed in accordance with respective IP addresses, See paragraph [0144]; (Examiner interpreted the IP routing of Burnett, using the routing module 505, as the claimed router examining the incoming packets to determine if they are addressed to a destination which is not local to the router);

A TCP spoofing kernel 513 that locally acknowledge data segments (packets) received from host (301), (claimed socket interface), see paragraph [0098]; Backbone protocol kernel 515 in combination with data compression Kernel 521 (claimed proxy application), the Backbone protocol kernel 515 is used for the multiplexing of multiple TCP connections (claimed multiple transport layer connections) carried onto a single backbone connection (claimed at least one physical layer connection), see paragraph [0099], wherein end-to-end connections between IP host 301 and its other IP host on the other side of the backbone link are provided, see paragraphs [0065], [0068], [0098] , and [0111] . (Claimed a proxy application, connected to receive incoming traffic from the socket interface, the proxy application associated with the router (module), and the proxy application, acting as a proxy for the source node, and establishing multiple TCP transport layer end-to-end connections on behalf of the source node over at least one physical connection).

In addition any remote PEP of Bartlett reads on the claimed remote network accelerator runs another proxy application operating as a proxy for the destination node.

Regarding claims 13 and 20, with reference to figures 1, 5, 6 and 7, Bartlett discloses a method for communicating a data stream between a source node (Host 101 in figure 1, and 719, figure 7) and a destination node (not shown in figure 3, host 713, figure 7), comprising:

Transmitting data segments (claimed data streams) from the source node to the destination node over multiple TCP connections that are multiplexed onto and carried by a single backbone connection, the multiple TCP connections being established between local network Performance Enhancing Proxying (PEP) peer (101 as in figure 1, and 701 as in figure 7) (claimed first proxy application) associated with a host 719 and a PEP (claimed second proxy application) associated with the other destination node, see paragraph [0066], (claimed establishing a plurality of transmission Control (TCP) transport layer connections between a first proxy application in communication with the source node and a second proxy application in communication with the second node, the first proxy application and second proxy application are over at least one physical layer connection);

Bartlett further discloses that after backbone connection is established between the PEPs (spoofers), IP host 301 initiates a TCP connection, a TCP spoofing kernel 513 of the PEP peer 101 local to the respective IP host checks its configured selective TCP spoofing rule, and If the rules indicate that the TCP connection should be spoofed, the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake,

then the spoofing PEP peer 101 sends a message across the backbone link to its peer 107 asking it to initiate a TCP three-way handshake with the other IP host on its side of the backbone link (destination node), see paragraph [0111]. (The connection between the first host and the first PEP is a client connection and the connection between the second PEP and the destination host is a TCP client connection).

As to claims 1, 6, 13, and 20

The difference between Bartlett and claims 1, 6, 13 and 20, is that Bartlett while teaching multiplexing a plurality of TCP connections for carrying data from the same source over the backbone, it doesn't specify stripping data streams or packet over TCP connections that are parallel persistent connections.

However, stripping data streams over parallel persistent connections is an established standard, see paragraph 8.1.

Therefore, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the persistent TCP connections as taught by the HTTP standard in lieu of the multiplexing of the TCP connections between PEP entities of Bartlett so that the performance enhancing proxying of Bartlett can be carried in conformance with established standard. The advantage would be numerous feature in the system of Bartlett such as saving the PEP CPU time by opening and closing fewer TCP connections, pipelining client requests, reducing network congestion by reducing the number of TCP open requests and many more, see HTTP/1.1 paragraph 8.1.1.

Regarding claim 2, Bartlett discloses that the PEPs (proxying) consist of a priority kernel 517 (unit 517, figure 5), the priority kernel is used to control the available

backbone capacity for different priority levels, the kernel uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc. See paragraph [0104]. (Claimed a proxy to proxy protocol is employed to specify at least an original transport protocol identifier, original address, and original ports of the nodes).

Regarding claim 7, Bartlett discloses that the PEP 101 and its peer PEP 107 of figure 6, wherein PEP 101 receives packets from a remote host, see paragraph [0122]. (Examiner interpreted the identical PEPs (figure 6) interfacing each LAN as having the characteristic of transmitting and receiving traffic across the backbone connection as being the "claimed proxy application additionally receives packets from a network connection addressed to a destination node which is local to the router").

Regarding claim 8, Bartlett further discloses having data compression Kernel 521 for compressing data prior to transmission across the backbone link [0101], (Examiner notes that by way of symmetry, compressed data when received by the PEP, it must be decompressed so it can be delivered to the destination host). (Claimed packets are compressed by the proxy application, and additionally comprising a data decompressor, for decompressing received packet, and the router forwards decompressed packets to the destination node).

Regarding claim 9, Bartlett discloses that data from a sending host is transmitted over multiple TCP connections that are multiplexed onto a backbone connection between peers PEPs 101 and 107. See paragraph [0111]. (Claimed at least one TCP transport layer sessions are carried over a persistent connection established with another data network routing device having a proxy application running thereon),

(Examiner interpreted the PEP 107 as the claimed "another data network routing device having a proxy application thereon", since it has similar components and provides functionalities similar to that of PEP 101).

Regarding claim 10, Bartlett discloses establishing a backbone connection between the two proxying devices (PEP, each proxying device has a proxy application, as indicated above with reference to claim 9, each using a spoofing kernel. See paragraph [0111]. (Claimed a proxy-to-proxy protocol is used to pass original source node and destination node information).

Regarding claim 11, Bartlett discloses a priority Kernel 517 within the PEP 101 (proxying peer) for controlling the available backbone capacity for different priority levels, the kernel 517 uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc.. See paragraph [0104]. (Claimed a proxy-to-proxy protocol specifies an original type for the packets).

Regarding claim 25, claim 25 is a computer instruction stored in memory for the implementation of the method of claim 13. Bartlett discloses that his method can be implemented using computer-readable media for providing instructions to a processor for execution. See [0161].

Regarding claims 14, 21 and 26, Bartlett as indicated above with regard to parent claim 13 discloses that the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake, and spoofing peer 107 initiating a TCP three-way handshake with the other IP host on its side of the backbone link, see [0111]. (Claimed enabling the communication of data streams to the destination node to appear to the source node as

Art Unit: 2616

occurring directly over the first TCP transport layer connection, and enabling communication with the source node to appear to the destination node as occurring directly over the second TCP transport layer connection).

Regarding claim 15, as discussed above, Bartlett discloses that the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake, [0111], in addition Bartlett also discloses that spoofing can be based on the source IP address, see paragraph [0093]. (Claimed enabling the first proxy application to receive the data stream for the destination node, further comprises enabling the first proxy application to spoof an address associated with the source node for the first TCP transport layer connection).

Regarding claim 16, as discussed above, Bartlett discloses spoofing peer 107 initiating a TCP three-way handshake with the other IP host on its side of the backbone link, see [0111]. In addition Bartlett discloses that spoofing can be based on the destination IP address, see paragraph [0093]. (Claimed enabling the second proxy application to provide the data stream to the destination node, further comprises enabling the second proxy application to spoof at least another address associated with the destination node for the second TCP transport layer connection).

Regarding claims 17, 22 and 27, Bartlett discloses a router module (505, figure 5) for receiving incoming packet from a source node (example: host 301, fig. 3) (claimed if the destination node is remote from the source node), and a TCP spoofing kernel 513 that locally acknowledge data segments (packets) received from host (301), (claimed socket interface), see paragraph [0098]. (Claimed if the destination node is remote to

Art Unit: 2616

the source node, providing the data stream to the first proxy application over a socket interface).

Regarding claims 19, 24 and 29, as indicated above with regard to base claims Bartlett in view of HTTP/1.1 standard disclose striping data over parallel persistent TCP connections that are carried by a single backbone connection, which is a connection between PEPs. Bartlett implicitly discloses communicating data streams over a plurality of PEP connection, because that is needed for other host of the system to simultaneously use the backbone. (Claimed communicating the data stream over a plurality of physical layer connections, wherein at least a portion of the plurality persistent TCP transport layer connections are provided over each of the plurality of physical layer connections).

5. Claims 3-5, 18, 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett in view HTTP/1.1 standard and further in view of Dillon et al, US 6,658,463). Hereinafter referred to as Dillon.

Regarding claims 3-4,18, 23 and 28, Bartlett inn view of HTTP/1.1 standard disclose using a compression kernel at each PEP (Performance Enhancing Proxying peer), see Bartlett, paragraph [0011], they don't specify that the compression is a dictionary based compression algorithm (as in claims 3, 18 , 23 and 28) and the coding is a Huffman coding (as in claims 4).

However, Dillon discloses in the same field of endeavor, using a dictionary based compression algorithm for decoding data before transmission (as in claims 3, 18, 23

Art Unit: 2616

and 28) and the coding is a Huffman coding (as in claim 4). See column 14, lines 56-67 and column 15 –column 16, lines 57. It would have been obvious to an ordinary person of skill in the art, at the time the invention was made to implement the dictionary based compression algorithm using Huffman coding as taught by Dillon as the compression kernel of Bartlett in view of HTTP/1.1 standard so that less computational resources can be used (column 15, line 15-22). The advantage in Bartlett in view of HTTP/1.1 system would be efficient use of the available bandwidth due to the composite benefit of compressing data with a minimized computational time that such compression provides.

Regarding claim 5, Bartlett in view of HTTP/1.1 standard do not disclose a dictionary associated with an existing end-to-end connection is utilized to service a new connection request.

However, Dillon discloses that a dictionary is used to provide high compression should data similar to earlier previously transferred data be submitted for compression. See column 15, lines 35-48. (Claimed a dictionary associated with an existing end-to-end connection is utilized to service a new connection request).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to use Dillon's end-to-end associated dictionaries in establishing Bartlett in view of HTTP/1.1 new connection so that prior to transmission of data, compression would be much faster if the data is similar in content to other data previously transmitted. (Dillon, column 15, lines 40-48). The advantage in Bartlett/HTTP/1.1 system would be efficient use of the available bandwidth due to the

composite benefit of high compression of data due to a minimized computational time, and the efficient use of the available backbone capacity due to the compression benefit.

Response to Arguments

6. Applicant's arguments with respect to claims 1-11, 13-29 have been considered but are moot in view of the new ground(s) of rejection.

Drawing:

Applicants argue that a memory and processor were implicitly disclosed to a skilled person in the description of the running of the proxy application at page 7, line 13 to page 9, line 2. Specifically, it is well known in the art that a "processor is the component that interprets instructions and processes data." It is also known that a processor is "one of the necessary components found in computers." Given that the instructions of the proxy application need to be processed, it is implicit to a skilled person in the art that the network accelerator includes a processor. Further, memory is well known in the art as "computer components or devices that retain data for some interval of time." It is also known that memory is "one of the fundamental components of all modern computers." Given that the proxy application and the data need to be stored in order to be processed, it is implicit to a skilled person in the art that the network accelerator includes memory.

Examiner, respectfully disagrees, the memory and processor were introduced in the drawing and the specification so to claim a memory for storing data, and a

processor for executing the stored data, wherein the execution of the stored data for “enabling actions” as indicated in non original claims 25-29.

The specification as originally filed doesn’t provide for stored data and for the execution of the stored data. Moreover the specification as originally filed doesn’t provide for the enabling actions by a processor as recited in claims 25-29.

The application as originally filed discloses a software diagram for implementation of the invention as shown in figure 4, and its reference in paragraph [0039]. A software implementation doesn’t provide for inherent memory and processor nor requires a processor as applicant alleged. The memory and the processor are structures that were not present in the specification as originally filed. Reference is made to the MPEP 2163.07(a) that states: By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter. In re Reynolds, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); In re Smythe, 480 F. 2d 1376, 178 USPQ 279 (CCPA1973). “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of

Art Unit: 2616

circumstances is not sufficient.” In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Specification and claims 25-29:

Applicants are required to cancel claims 25-29 and corresponding amended passage in the specification for similar reasons as discussed above with regard to the drawings.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see form PTO-982.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2616

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AHMED ELALLAM
Examiner
Art Unit 2616
12/25/06



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600